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US App. No. 10/782,603

IN THE CLAIMS:

1. (currently amended) An assembling structure of an indicating needle for an instrument comprising:

a case body including an upper case and a lower case to be attached to the upper case;

an indicating needle shaft rotatably ~~pivoted~~ supported by said upper case and said lower case, ~~and having a top~~ an upper end ~~portion projected~~ projecting to an outside from said upper case; and

an indicating needle to be mounted on the upper end portion ~~projection~~ of said indicating needle shaft~~[[,]]~~; and

a jig for supporting a lower end surface of the indicating needle shaft when assembling the indicating needle to the upper end portion of the indicating needle shaft;

~~wherein a concave portion is provided on a shift supporting portion of said indicating needle shaft in a bottom surface of said lower case, and a lower end portion of said indicating needle shaft is projected into the concave portion, and the projection amount is smaller than a depth of said concave portion~~ a bottom wall of the lower case is provided with a through-hole in which the indicating needle shaft is inserted, and the jig supports the lower end surface of the indicating needle shaft inserted into the through-hole inside the bottom wall from a lower surface side of the bottom wall, when the indicating needle is pressed onto the upper end portion of the indicating needle shaft.

2. (currently amended) An indicating needle assembling method for ~~mounting~~ assembling an indicating needle on an upper end portion of an indicating needle shaft in which ~~each of a top~~ the upper end ~~portion and a lower end portion~~ is rotatably ~~pivoted~~ supported by an upper case and a lower case, ~~and a leading end of the top portion is projected~~ to project to an outside from said upper case ~~and a lower end portion of the indicating needle shaft is rotatably supported by a lower case~~, comprising the steps of:

~~providing a concave portion on a shift supporting portion of said indicating needle shaft in a bottom surface of said lower case, and projecting a lower portion of said indicating needle shaft into said concave portion, and disposing a jig for receiving a lower end portion of said~~

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~~indicating needle shaft to a bottom surface side of said lower case when said indicating needle is pressed into a leading end of the top portion of said indicating needle shaft, and receiving a strength of said indicating needle pressure by said jig.~~

inserting the lower end portion of the indicating needle shaft into a through-hole, which is formed in a bottom wall of the lower case, and communicates an interior portion of a concave portion formed in a position corresponding to a shaft supporting portion of the indicating needle shaft in a lower surface of the bottom wall and an interior portion of the lower case, so as to project in the interior portion of the concave portion without projecting out of the concave portion;

placing a jig having a projection portion for supporting a lower end surface of the indicating needle shaft in a lower surface side of the lower case, when pressing the indicating needle onto the upper end portion of the indicating needle shaft; and

inserting the projection portion of the jig into the concave portion, so as to receive a force acting on the indicating needle shaft from the indicating needle by the projection portion of the jig when pressing the indicating needle onto the upper and portion of the indicating needle shaft.

3. (currently amended) A stepping motor incorporated instrument, comprising:

a rotor;
a stator;
a coil attached to said stator;
a case body including an upper case and a lower case, for housing said rotor, said stator, and said coil;

an indicating needle shaft rotatably ~~pivoted~~ supported by said upper case and said lower case, and having a top ~~an upper end~~ portion projected projecting to an outside from said upper case; and

an indicating needle to be mounted on the projection upper end portion of said indicating needle shaft,

wherein ~~a concave portion is provided on a shaft supporting portion of said indicating needle shaft in a bottom surface of said lower case, and a lower end portion of said indicating needle shaft is projected into the concave portion, and the projection amount is smaller than a depth of said concave portion~~ a lower surface of a bottom wall of the lower case is formed with a

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concave portion in a position corresponding to a shaft supporting portion of the indicating needle shaft, so as to receive a jig for supporting a lower end surface of the indicating needle shaft when assembling the indicating needle.

the bottom wall is formed with a through-hole, which opens into the concave portion, and the indicating needle shaft is inserted into the through-hole, and

a lower end portion of the indicating needle shaft penetrates the through-hole to project in the concave portion, without projecting out of the concave portion.

4. (new) The assembling structure of an indicating needle for an instrument according to claim 1, wherein the jig includes a projection portion for supporting the lower end surface of the indicating needle shaft, and the lower surface of the bottom wall of the lower case is formed with a concave portion for receiving the projection portion of the jig in a portion in which the through-hole is provided.

5. (new) The indicating needle assembling method according to claim 2, further comprising removing the jig after the indicating needle is pressed onto the upper end portion of the indicating needle shaft.